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Medicinal Natural Products

A Biosynthetic Approach

Second Edition

Paul M Dewick
School of Pharmaceutical Sciences
University of Nottingham, UK

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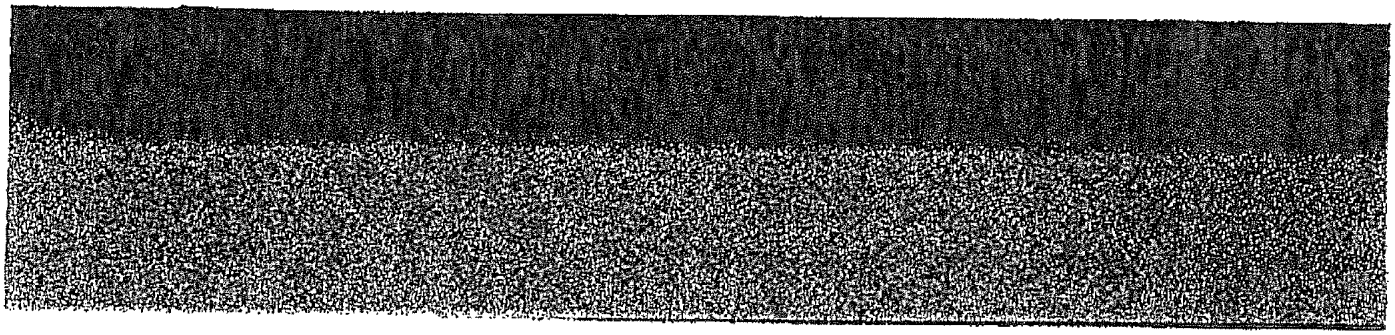

Table 5.1 Volatile oils containing principally terpenoid compounds

Major volatile oils have been divided into two groups. Those oils containing principally chemicals which are terpenoid in nature and which are derived by the deoxyxylulose phosphate pathway are given in Table 5.1 below. Oils which are composed predominantly of aromatic compounds which are derived via the shikimate pathway are listed in Table 4.1 on page 139. The introductory remarks to Table 4.1 are also applicable to Table 5.1.

Oils	Plant source	Plant part used	Oil content (%)	Major constituents with typical (%) composition	Uses, notes
Bergamot	*Citrus aurantium* ssp. *bergamia* (Rutaceae)	fresh fruit peel (expression)	0.5	limonene (42) linalyl acetate (27) γ-terpinene (8) linalool (7)	flavouring, aromatherapy, perfumery also contains the furocoumarin bergapten (up to 5%) and may cause severe photosensitization (see page 146)
Camphor oil	*Cinnamomum camphora* (Lauraceae)	wood	1–3	camphor (27–45) cineole (4–21) safrole (1–18)	soaps
Caraway	*Carum carvi* (Umbelliferae/Apiaceae)	ripe fruit	3–7	(+)-carvone (50–70) limonene (47)	flavour, carminative, aromatherapy
Cardamom	*Elettaria cardamomum* (Zingiberaceae)	ripe fruit	3–7	α-terpinyl acetate (25–35) cineole (25–45) linalool (5)	flavour, carminative, ingredient of curries, pickles

(*Continued overleaf*)

					the main flavour and odour comes from the minor oxygenated components terpeneless orange oil is obtained by removing much of the terpenes under reduced pressure: this oil contains about 20% aldehydes, mainly octanal and decanal.
Orange flower (Neroli)	*Citrus aurantium* ssp. *amara* (Rutaceae)	fresh flowers	0.1	linalool (36) β-pinene (16) limonene (12) linalyl acetate (6)	flavour, perfumery, aromatherapy
Peppermint	*Mentha* x *piperita* (Labiatae/Lamiaceae)	fresh leaf	1–3	menthol (30–50) menthone (15–32) menthyl acetate (2–10), menthofuran (1–9)	flavouring, carminative, aromatherapy
Pine	*Pinus palustris* or other *Pinus* species (Pinaceae)	needles, twigs		α-terpineol (65)	antiseptic, disinfectant, aromatherapy
Pumilio pine	*Pinus mugo* ssp. *pumilio* (Pinaceae)	needles	0.3–0.4	α- and β-phellandrene (60) α- and β-pinene (10–20) bornyl acetate (3–10)	inhalant the minor components bornyl acetate and borneol are mainly responsible for the aroma

(*Continued overleaf*)